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# Aflatoxin $M_1$ contamination of cow's raw milk in different seasons from Qazvin province, Iran

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## ABSTRACT

Aflatoxins are extremely teratogenic, mutagenic, toxic, and carcinogenic compounds. In the present study, 60 cow's raw milk samples were collected from Qazvin province, Iran during Dec 2015 till July 2016. Enzyme-linked immunoabsorbent assay (ELISA) was applied to determine Aflatoxin $M_1$ ($AFM_1$) in the milk samples. $AFM_1$ was detected in 34 raw milk samples ranging from $6.25\times10^{-3}$ to $127.87\times10^{-3}$ (part per billion). $AFM_1$ contents in all positive samples were far below the US legal limit (0.5 ppb), but $AFM_1$ in30% of the raw milk samples exceeded the EU legal limit (0.05) and 5% of the samples exceeded the Iran legal limit (0.1 ppb). This study indicates a high occurrence of $AFM_1$ in cow's raw milk especially in winter ($40.71\times10^{-3}$ppb) but the level of contamination were not significantly different in various seasons ($P<0.05$). Since contamination of milk with $AFM_1$ is a potential risk for human health, in order to prevent the repetition, milk and milk products should be controlled periodically. The levels of $AFM_1$ contamination of milk in the present study showed that continuous examining of milk is necessary to improve public health and reduce consumer exposure to aflatoxins. Reducing the levels of $AFB_1$ in animal feedstuffs can be regarded as initial step to control the transfer of $AFM_1$ to the humans.

Key words: Milk, AFM1, ELISA.



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